

Application No. 10/822,642

REMARKS

Claims 20, 25, 26, 31-39, 41, and 43-48 are pending. By this Amendment, claim 28 is canceled without prejudice in favor of new claim 48. Specifically, new claim 48 present the subject matter of previous claim 28 with new claim ordering. Applicant notes that the number of total claims is unchanged. Claims 20, 31, 41 and 43 are amended. Claims 20 and 31 are amended for clarity with respect to the antecedent basis as described further below. The specification provides support for the new feature of "wherein the coating and the core structure have different dopant compositions in claims 20 and 31, for example, at page 10, lines 15-20, page 11, lines 12-22, page 25, lines 2-9, page 26, lines 16-18, and page 53, lines 11-21. No new matter is introduced by the amendments.

All pending claims stand rejected. Applicant respectfully requests reconsideration of the rejections based on the following analysis.

Claim Objection

The Examiner objected to claim 28 as being in improper dependent form under 37 C.R.F. 1.75(c) since the claim limits cancelled claim 22. Applicant has canceled claim 28 in favor of new claim 48. In view of the cancellation of these claims, Applicant respectfully request withdrawal of the objection to the claims.

Rejection under 35 U.S.C. § 112, Second Paragraph

The Examiner rejected claims 20, 25, 26, 28, 31-39, 41, and 43-47 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner asserted four specific issues that are addressed in order.

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First, Examiner indicated that there is no antecedent basis for "the resulting structure." To expedite prosecution, claims 20 and 31 have been amended to replace "the resulting structure" with "the optical fiber perform."

Second, Examiner indicated that there is no antecedent basis for "the fully densified material mass density." To expedite prosecution, claims 20, 31, 41, and 43 have been amended to consistently use "fully densified mass density." Specifically, claims 20 and 31 have been amended to replace both "mass density when fully densified" and "fully densified material mass density" with "fully densified mass density. Claims 41 and 43 have been amended to replace "fully densified material mass density" with "fully densified mass density."

Third, Examiner found the language "from" 0.02 to 0.55 to be unclear. With all due respect, this language is used correctly. Applicant has attached the definition of "from" from the Webster's Collegiate Dictionary. "From" indicates the starting point of a parameter. It does not indicate necessarily anything about time. Applicant maintains that this language is completely clear and definite.

Fourth, Examiner asked how the ranges are interpreted. A fully densified mass density is equal to 1. If the coating has an average density that is a factor within the range of about 0.02 to about 0.55 of the fully densified mass density, then the coating has an average density of about 2% to about 55% of the fully densified mass density. A person of ordinary skill in the art would be an engineer or scientist with significant experience in optics. This language would be completely clear to a person of ordinary skill in the art.

In view of the clarifying amendments and clarifications, Applicant respectfully requests withdrawal of the rejection of claims 20, 25, 26, 28, 31-39, 41, and 43-47 under 35 U.S.C. § 112, second paragraph, as being indefinite.

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Rejection Over Hicks, Miller, Berkey, and Kobayashi

The Examiner rejected claims 20, 25, 26, 31-39, 41, and 43-47 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,749,396 to Hicks (Hicks) in view of U.S. Patent 4,501,602 to Miller (Miller), U.S. Patent 4,684,384 to Berkey (Berkey) and U.S. Patent 3,957,474 to Kobayashi et al. (Kobayashi). The Examiner indicated that the general nature of the references was disclosed in the previous Office Actions. Applicant has amended claim 20 to more particularly point out Applicant's claimed invention. These amendments emphasize more fundamental differences between Applicant's claimed invention and the teachings of the prior art. Applicant maintains that the combined teachings of the cited references do not render Applicant's invention *prima facie* obvious. Applicant respectfully requests reconsideration of the rejection based on the following comments.

Examiner indicates that the language "to obtain a bimodal radial distribution in dopant concentration" reflects only an intention not an actually obtaining a bimodal radial distribution in dopant concentration. Examiner states, "Hicks insertion step could be 'to obtain' a bimodal distribution fiber-such by further steps. This is NOT to be interpreted as a finding that Hicks discloses obtaining such or that such would be obvious." While Applicant believes that the term "obtain" is sufficiently clear, claims 20 and 31 has been amended to clearly recite that "wherein the coating and the core structure have different dopant compositions." Hicks fails to disclose or suggest the coating and the core structure/glass rod have different dopant compositions. Hicks teaches away from this feature through the suggestion that the entire core has a common composition without any dopant migration during the processing of the optical fiber. Specifically, Hicks discloses maintaining the relatively sharp step change in the index of refraction between the insert and the glass preform structure. See col. 2, lines 49-54. Applicant's structure is not appropriate for processing steps that avoid dopant migration to form this sharp

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gap. None of the references alone or combined disclose or suggest that this feature, and this is not merely a simple substitution that would be anticipated in the art given that Hicks points in the opposite direction from Applicant's claimed method.

Since the references alone or combined do not teach all of the claim elements, the combined teachings of the references do not render Applicant's invention *prima facie* obvious. In view of the above comments, Applicant respectfully requests withdrawal of the rejection of claims 20, 25, 26, 31-39, 41, and 43-47 under 35 U.S.C. § 103(b) as being unpatentable over Hicks in view of Berkey, Kobayashi and Miller. Although Applicant does not acquiesce in the Examiner's position on the particular issues relating to the dependent claims, Applicant does not presently comment on the specific issues relating to the dependent claims since these issues are moot in view of the comments above.

Rejection Over Hicks, Miller, Berkey, Kobayashi, and Bi under 35 U.S.C. § 103(a)

The Examiner rejected claims 31-38, 42, and 43 under 35 U.S.C. § 103(a) as being unpatentable over Hicks in view of Miller, Berkey, Kobayashi and U.S. Patent 5,958,348 to Bi et al. (Bi). Applicant has amended claim 31 to more particularly point out their claimed invention. Applicant notes that significant features of the claimed invention are absent from the teachings of the references. Thus, the combined teachings of the references do not render Applicant's claimed invention *prima facie* obvious. Applicant respectfully request reconsideration of the rejection based on the following comments.

Applicant has amended claim 31 to clarify fundamental differences between Applicant's claimed invention and the teachings of the cited references. In particular, none of the claimed references alone or combined teach "wherein the coating and the glass rod have different dopant compositions." Thus, the combined teachings of the references do not render Applicant's claimed invention *prima facie* obvious.

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Furthermore, Bi teaches away from forming a coating as described in the present claims. Bi is directed to the formation and harvesting of particles. If a coating is formed, this does not facilitate the formation of particles. However, Bi and coworkers have developed a light-based coating technique. This is described in published PCT application WO 02/32588. But this PCT application is only potential prior art under 102(a). Based on the common inventors, this work was not work of another under 102(a), so this light reactive deposition approach is not proper prior art against the present application.

Since the combined teachings of the cited references do not render the claims *prima facie* obvious, Applicant respectfully requests withdrawal of the rejection of claims 31-38, 42, and 43 under 35 U.S.C. § 103(a) as being unpatentable over the Hicks patent in view of Miller, Berkey, Kobayashi and Bi. Although Applicant does not acquiesce in the Examiner's position on the particular issues relating to the dependent claims, Applicant does not presently comment on the specific issues relating to the dependent claims since these issues are moot in view of the comments above.

#### CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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place where old clothes are sold 2: a: MERRY; also: an elegant or showy garment b: something showy, frivolous, or nonsensical c: LUXURY, TRIFLE d: ORIENTATION; esp: something foolish or affectedly elegant

Frisbee /friz-bee/ trademark — used for a plastic disk several inches in diameter sailed between players by a flip of the wrist

fries /fri-eez/ n [F, fr. pp. of *frier* to curl] (1884): FRIIZEE

Frisk alligator /fritz-a/ n [Leslie George Frisk b1897 Eng. engineer] (ca. 1934): an alligator having a nose portion projecting ahead of the hinge axis and a lower surface in line with the lower surface of the wing

frisker /frit-zər/ n [F, fr. *friser*] (1730): HAIRDRRESSER

Friskian /frit-zheən, frit-tʃən/ adj [L *frisus* Frisian; akin to OE *Frisa*, *Frissa* a Frisian] (1598): of, relating to, or characteristic of Friseland, the Frisians, or Frisian

Frisian n (1601): a member of a people that inhabit principally the Netherlands and some islands of Friseland and the Frisian islands in the North Sea 2: one of the Germanic languages of the Frisian people

frisk /fritsk/ vb [obs. *frisk* (lively)] w (1519): to leap, skip, or dance in a lively or playful way: GAMDOL ~ w: to search (a person) for something (as a concealed weapon) by running the hand rapidly over the clothing and through the pockets ~ FRISK-ER n

frisk n (1525) 1: archaic: CAPER b: GAMBOL ROMP c: DIVERSION 2: an act of frisking

frisket /frit-skət/ n [F *frisque*, fr. MF (*c.* 1898): a masking device or material used esp. in printing or graphic arts

frisky /'frit-ski-/ adj [*frisk*-i-lee; -est (ca. 1500): inclined to 'frisk playfully; also: LIVELY ~ frisk-i-ly /frit-ska-i-lee/ adv ~ FRISK-I-NESS n

frisson n

frisson /frit-'sɪn/ n pl frissons /'fasi(z)/ [F, shiver, fr. OF *frison*, fr. LL *frictio*, *frictio* fr. L lit., friction taken in LL as derivative of *friger* to be cold] (1777): a brief moment of emotional excitement; SHUDDER, THRILL

frit /frit/ n [It *fritta*, fr. fem. of *fritto*, pp. of *frigere* to fry, fr. L *frigere* to roast — more at Fry] (1662): 1: the calcined or partially fused materials of which glass is made 2: any of various chemically complex glasses used as enamels

frite v; fritted; fritting (1832) 1: to prepare (materials for glass) by heat: FUSE 2: to convert into a frit

fritch /fritʃ/ n (14c) archaic: ESTUARY

fritillater n /frit-'tī-ə-tər/, -rē/ n [NL, fr. f. *fritillus* dice cup; fr. the markings of the pearly] (1664): any of a widespread genus (*Fritillaria*) of bulbous herbs of the lily family with variably colored and often mottled or checkered flowers

fritillary /frit-'il-əri-, -rē/ n pl -lar-ies [NL *fritillaria*] (1633) 1: FRITILLARIA 2: any of numerous nymphalid butterflies (*Argynnis*, *Speyeria*, and related genera) that usu. are orange with black spots on the upper side of both wings and silver spotted on the underside of the hind wing

frit-lar-ya /frit-'lə-ri-/ n [L, fr. *fritto*] (1931): an unfolded omelet often containing chopped vegetables or meats

frittered adj /fritəd/ (1879): being porous glass made of sintered powdered glass or fiberglas

fritter v; fritters n [ME *fritour*, fr. MF *fritura*, fr. (assumed) VL *frittura*, fr. L *friticus*, pp. of *frigere* to roast] (14c): a small mass of fried or sautéed batter often containing fruit or meat

fritterer vb /fritər/ n (fragment, shred) vt (1728) 1: to spend or waste bit by bit, on trifles, or without commensurate return ~ vi: used with away 2: to break into small fragments ~ vt: DESAPATE, SPINDLE ~ frit-TER-ER n

frito v; fritoes /frit-'ō-/ n [lit. lit., mixed fried (food)] (1903): small morsels of meat, seafood, or vegetables coated with batter and deep fried

fritz /frits/ n [origin unknown] (1902): a state of disorder or disrepair — used in the phrase on the fritz

frit-vol /frit-'vəl/ v -oled or -illed: -oid-ing or -oid-ing -v/-ing, -vol-ly [back-formation fr. *fritvolous*] (1864): act frivolously: TRIFLE

frit-voler or frit-volder /frit-'vələr, -vələ-dər/ n pl -ies (1796) 1: the quality or state of being frivolous 2: a frivolous act or thing

frit-volous /frit-'vələs/ adj [ME, fr. L *fritvolus*] (15c) 1: a: of little weight or importance b: having no sound basis (as in fact or law) (a ~ law suit) 2: lacking in seriousness b: marked by unbecoming levity ~ frit-vol-u-s-ly adv ~ frit-vol-u-s-ness n

fritze /frit-zi/ vb [F, *fricer*] v (1660): to form into small tight curls ~ vt, of hair: to form a mass of tight curls

fritz n (1668) 1: a tight curl: 2: hair that is tightly curled

fritze vb [later, of /fry/] w (1835): to fry or sear with a sizzling noise ~ vt: SIZZLE

fritzle /frit-zi/ vb fritzled; fritz-ling -v/-ing -zz-ling [prob. akin to OE *fria* (hair curl)] (1573): FUZZ-CURL

fritzle n (1613): a crisp curl

fritzle vb fritzled; fritz-ling /frit-zi/ + zizzle/ v (1839) 1: to fry until crisp and curled 2: BURN, SCORCH ~ vi: to cook with a sizzling noise

frizzy /frit-zi/ adj fritzy-ier; -est (ca. 1864): tightly curled ~ fritzy-I-ees n

fro /fro/ prep [ME, fr. ON *fret*; akin to OE *frem* from] (13c) dial Brit: FROM

fro /fro/ adv (14c): BACK AWAY — used in the phrase to and fro

frock /frok/ n [ME *froc*, fr. MF *froc*, Gmc. of Grac origin; akin to OHG *frock* mantle, coat] (14c) 1: an outer garment worn by monks and friars: HART 2: an outer garment worn chiefly by men: a: a long loose mantle b: a workman's outer shirt; esp.: WORK PROCK c: a woolen jersey worn esp. by sailors 3: a woman's dress

frock n (1828) 1: to clothe in a frock 2: to make a cleric of

frock coat n (1841): a knee-length waist, double-breasted coat

frock /frok/ n (18th cent. after, of obs. *froward* turned away, fr. ME, fr. the front of the handle) (1574): a cleaving tool for splitting oak staves and ship timbers from the block



## References

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